Washington State
Department of Transportation

WSDOT Test Method T 426

Pull-Off Test for Hot Melt Traffic Button Adhesive

1. Scope

   This method describes the procedure for determining the force (psi) required to pull a Type 1 raised pavement marker, from an asphalt or concrete surface that has been adhered with hot melt button adhesive.

2. Apparatus and Materials

   a. Asphalt or concrete surface, conditioned for 24 hours at standard laboratory conditions prior to testing.

   b. Raised pavement marker – WSDOT Type 1 plastic or thermoplastic, drilled in the center to accept a threaded steel rod.

   c. Laboratory melter – as described in ASTM D5167.

   d. Threaded steel eye bolt for attaching to the raised pavement marker.

   e. Tensile testing apparatus – as described in AASHTO T 237 Section 15, fitted with a threaded steel rod with a 2″ hook.

3. Procedure

   a. Pull-off tests shall be run in triplicate.

   b. Hot melt traffic button adhesive shall be heated in a laboratory melter to the manufacturer's recommended application temperature.

   c. A quantity of adhesive sufficient to squeeze out a small bead around the entire periphery of a 4″ button shall be poured onto surface and a pre-drilled raised pavement marker shall be seated on the adhesive and allowed to cure for at least 4 hours.

   d. A threaded steel eye bolt shall be inserted into the pre-drilled hole in the button.

   e. The puck/block and button shall be placed in the tensile testing apparatus and the threaded hook shall be inserted in the eye bolt.

   f. Load shall be applied slowly until the button pulls off from the surface and the maximum load shall be recorded.

4. Calculation

   The pull-off strength shall be calculated as follows:

   Pull-off Strength, psi = L/A

   L = Maximum load, pounds

   A = Surface area of Pavement marker (in^2)

5. Report

   The pull-off strength reported shall be the average of the three determinations.